AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-22 (Cancelled).

23. (Currently Amended) A machine-implemented method comprising ~~performing a machine-executed operation involving instructions, wherein the machine-executed operation is at least one of:~~

~~A) sending said instructions over transmission media;~~

~~B) receiving said instructions over transmission media;~~

~~C) storing said instructions onto a machine-readable storage medium; and~~

~~D) executing the instructions;~~

~~wherein said instructions are instructions which, when executed by one or more processors, cause the performance of a frequent itemset operation by performing~~ the steps of:

dynamically selecting which occurrence counting technique to use from a plurality of available occurrence counting techniques by performing the steps of:

generating cost estimates for each of the plurality of available occurrence counting techniques based on an estimated I/O cost of using the available occurrence counting technique,

wherein generating cost estimates for each of the plurality of available occurrence counting techniques based on an estimated I/O cost comprises:

determining a size of a candidate prefix tree;

determining an amount of memory that can be used for the candidate prefix tree;

comparing the size of the candidate prefix tree to the amount of memory that can be used to store the candidate prefix tree; and

generating an I/O cost estimate for a prefix tree technique based, at least in part, on the size of the candidate prefix tree and the

amount of memory that can be used to store the candidate prefix tree; and

selecting the occurrence counting technique that has the lowest estimated cost; and

during said frequent itemset operation, using said selected occurrence counting technique to count occurrences of at least one combination to determine whether said at least one combination satisfies frequency criteria associated with said frequent itemset operation;

wherein the step of dynamically selecting and using said selected occurrence counting technique are performed by one or more computing devices.

24. (Currently Amended) The machine-implemented method of Claim 23, wherein the selected occurrence counting technique is a prefix tree technique.

25. (Cancelled)

26. (Currently Amended) The machine-implemented method of Claim 23, wherein the selected occurrence counting technique is a bitmap intersection technique.

27. (Currently Amended) The machine-implemented method of Claim 23, wherein generating cost estimates for each of the plurality of available occurrence counting techniques based on an estimated I/O cost comprises:

generating an I/O cost estimate for a bitmap intersection technique based, at least in part, on a cost of reading bitmaps for each frequent item.

28. (Currently Amended) The machine-implemented method of Claim 23, wherein the plurality of available occurrence counting techniques include a bitmap intersection technique and a prefix tree technique.

29. (Currently Amended) The machine-implemented method of Claim 23, further comprising ~~wherein execution of said instructions by said one or more processors further causes~~:

determining that a particular occurrence counting technique will not be considered during any phase of the frequent itemset operation; and

performing the frequent itemset operation without performing startup operations for said particular occurrence counting technique.

30-36 (Cancelled).

37. (Currently Amended) A machine-implemented method comprising ~~performing a machine-executed operation involving instructions, wherein the machine-executed operation is at least one of:~~

~~A) sending said instructions over transmission media;~~

~~B) receiving said instructions over transmission media;~~

~~C) storing said instructions onto a machine-readable storage medium; and~~

~~D) executing the instructions;~~

~~wherein said instructions are instructions which, when executed by one or more processors, cause the performance of a frequent itemset operation by performing~~ the steps of:

dynamically selecting which occurrence counting technique to use from a plurality of available occurrence counting techniques based on conditions existing before the frequent itemset operation is performed in a computing environment in which the frequent itemset operation is to be performed,

wherein the conditions include how busy ~~workload of~~ a computer system in which the frequent itemset operation is to be performed currently is, and an amount of volatile memory available to store a candidate prefix tree; and

during said frequent itemset operation, using said selected occurrence counting technique to count occurrences of at least one combination to determine whether said at least one combination satisfies frequency criteria associated with said frequent itemset operation;

wherein the step of dynamically selecting and using said selected occurrence counting technique are performed by one or more computing devices.

38. (Currently Amended) A machine-implemented method comprising the steps of:

dynamically selecting which occurrence counting technique to use from a plurality of available occurrence counting techniques based on conditions existing before the frequent itemset operation is performed in a computing environment in which the frequent itemset operation is to be performed,

wherein the conditions include how busy a computer system in which the frequent itemset operation is to be performed currently is, and an amount of volatile memory available to store a candidate prefix tree; and

during said frequent itemset operation, using said selected occurrence counting technique to count occurrences of at least one combination to determine whether said at least one combination satisfies frequency criteria associated with said frequent itemset operation;

wherein the step of dynamically selecting and using said selected occurrence counting technique are performed by one or more computing devices;

~~The method of Claim 37,~~

wherein:

the frequent itemset operation is performed in a plurality of phases, wherein each phase is associated with combinations that have a particular number of items;

the step of dynamically selecting includes dynamically selecting which occurrence counting technique to use for at least one phase of said plurality of phases; and

the step of using includes using said selected occurrence counting technique to determine whether candidate combinations for said at least one phase satisfy said frequency criteria;

said at least one phase is a phase during which combinations having N items are processed;

a first occurrence counting technique is selected for said phase of said frequent itemset operation;

~~the operation includes~~ dynamically selecting a second occurrence counting technique in the phase of a subsequent frequent itemset operation during which combinations having N items are processed; and

the first occurrence counting technique is different from said second occurrence counting technique.

39. (Currently Amended) The machine-implemented method of Claim 37, further comprising ~~wherein execution of said instructions by said one or more processors further causes~~:

determining that a particular occurrence counting technique will not be considered during any phase of the frequent itemset operation; and

performing the frequent itemset operation without performing startup operations for said particular occurrence counting technique.

40. (New) The machine-implemented method of Claim 37, wherein:

the frequent itemset operation is performed in at least a first phase and a second phase;

the first phase is associated with combinations that have a first number of items;

the second phase is associated with combinations that have a second number of items; and

the occurrence counting technique selected for the first phase and the occurrence counting technique selected for the second phase are different.

41. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 23.

42. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 24.

43. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 26.

44. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 27.

45. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 28.

46. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 29.

47. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 37.

48. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 38.

49. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 39.

50. (New) A volatile or non-volatile computer-readable storage medium storing one or more sequences of instruction, wherein execution of the one or more sequences of instruction

by one or more processors causes the one or more processors to perform the machine-implemented method of Claim 40.